APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,807	10/03/2003	Mark D. MacLean	NOR-036 (16094RO)	3252

32836   7590   12/26/2007
GUERIN & RODRIGUEZ, LLP
5 MOUNT ROYAL AVENUE
MOUNT ROYAL OFFICE PARK
MARLBOROUGH, MA 01752

EXAMINER
CHAN, SAI MING

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
12/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/678,807	MACLEAN ET AL.
	Examiner	Art Unit	
	Sai-Ming Chan	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *10 September 2007*.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-20* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1-20* is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)./Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 3, 11 and 12 are canceled.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1.　　Determining the scope and contents of the prior art.
2.　　Ascertaining the differences between the prior art and the claims at issue.
3.　　Resolving the level of ordinary skill in the pertinent art.
4.　　Considering objective evidence present in the application indicating

obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)

and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1,3,7,10-13 &16-18 are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Bruckman et al. (U.S. Patent Publication # 20040179518), in view**

of **Sandstrom (U.S. Patent Publication # 6697373).**

Consider **claims 1 and 10,** Bruckman et al. clearly disclose and show a method

of adaptively managing bandwidth (paragraph 5 (LCAS is used for dynamic bandwidth

allocation)) among a plurality of services (fig. 1 (32s (data nodes))) contending for

bandwidth on an optical link (fig.1; paragraph 52, lines 1-10) having a bandwidth

capacity (paragraph 5, lines 7-17 (container capacity)), the method comprising:

allocating bandwidth (paragraph 5 (LCAS for bandwidth allocation)) to each

service contending for bandwidth of the optical link;

Sandstrom clearly shows a current utilization metric (column 5, lines 63-67,

column 6, lines 1-7) representing a measure of current usage of the allocated bandwidth

by that service; and

allocating additional bandwidth (column 2, lines 59-65; column 9, lines 48-55(if

link is not at full capacity, bandwidth will be diverted from other segments to the one that

needs it)) to one of the services in response to the current utilization metric of that

service if bandwidth usage of the optical link is currently at less than full capacity,

otherwise balancing the bandwidth allocation (column 2, lines 59-65; column 9, lines 48-

55 (if the link is at full capacity, balance the bandwidth usage according to current

utilization metric)) between the services in response to the current utilization metric of at

least one of the services if the bandwidth usage of the optical link is currently at full

capacity.

computing for each service a utilization metric representing a measure of current

usage of a maximum allowed bandwidth for that service (paragraph 0006, lines 4-7

(computes the traffic flow)), such that the utilization metrics of the services are made

approximately equal to each other (paragraph 0006, lines 8-15 (fair sharing)).

Therefore it would have been obvious to a person of ordinary skill in the art at the

time the invention was made to incorporate a bandwidth managing method, as taught

by Bruckman et al., and assign bandwidth according to usage capacity, as taught by

Sandstrom, in order to guarantee that the SONET network is utilizing its bandwidth

efficiently.

Consider **claim 7, and as applied to claim 1 above,** Bruckman et al., as

modified by Sandstrom, clearly disclose and show a method, further comprising using

Link Capacity Adjustment Schemes (LCAS) technology (paragraph 5) to allocate

additional bandwidth to one of the services when usage of the optical link is at less than full capacity.

Consider **claim 13,** and **as applied to claim 10 above,** Bruckman et al., as modified by Sandstrom, clearly disclose and show a method as described.

Furthermore, Sandstrom clearly shows a step of balancing includes removing bandwidth from one of the services and allocating the removed bandwidth to another one of the services (column 2, lines 59-65; column 9, lines 48-55).

Consider **claim 16,** Bruckman et al. clearly disclose and show a network, comprising:

a plurality of network elements (fig. 1 (32s (data nodes))) connected to each other by optical links (fig. 1;paragraph 52 (SONET));

a first path for carrying traffic associated with a first service through the network, the first path extending through the network over at least one of the optical links (fig. 1;paragraph 52);

a second path for carrying traffic associated with a second service, the second

path extending through the network over at least one of the optical links, the second

path having a link in common with the first path (fig. 1;paragraph 52);

wherein a first one of the network elements allocates a portion of the bandwidth

(paragraph 5 (LCAS for bandwidth allocation)) of the common link to the first service

and a second one of the network elements allocates a portion of the bandwidth

(paragraph 5 (LCAS for bandwidth allocation)) of the common link to the second

service.

However, Bruckman et al. do not specifically show bandwidth assignment

corresponding to usage capacity.

In the same field of endeavor, Sandstrom clearly shows each of the first and

second network elements determining for the first and second services, respectively, a

current utilization metric (column 5, lines 63-67, column 6, lines 1-7) representing a

current usage by that service of the bandwidth allocated to that service, the first and

second network elements balancing the bandwidth allocated to the services (column 2,

lines 59-65; column 9, lines 48-55 (if the link is at full capacity, balance the bandwidth

usage according to current utilization metric)) if the current utilization metric of at least

one of the services exceeds a specified threshold and usage of the bandwidth of the

common link is currently at full capacity.

computing for each service a utilization metric representing a measure of current

usage of a maximum allowed bandwidth for that service (paragraph 0006, lines 4-7

(computes the traffic flow)), such that the utilization metrics of the services are made approximately equal to each other (paragraph 0006, lines 8-15 (fair sharing)).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a bandwidth managing method, as taught by Bruckman et al., and assign bandwidth according to usage capacity, as taught by Sandstrom, in order to guarantee that the SONET network is utilizing its bandwidth efficiently.

Consider **claim 17,** and **as applied to claim 16 above,** Bruckman et al., as modified by Sandstrom, clearly disclose and show a network, further comprising a central controller (paragraph 8 (manager node)) for sending messages to the network elements (paragraph 8) that direct the balancing of the bandwidth allocated to the services.

Consider **claim 18,** and **as applied to claim 16 above,** Bruckman et al., as modified by Sandstrom, clearly disclose and show a network, wherein the network is a ring network (paragraph 8 (ring network)).

Claims 2, 4, 9, 15 & 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bruckman et al. (U.S. Patent Publication # 20040179518),** in view of **Sandstrom (U.S. Patent # 6697373),** and further in view of **Branstad et al. (U.S. Patent # 6498782).**

Consider **claim 2, and as applied to claim 1 above,** Bruckman et al. as modified by Sandstrom, clearly disclose and show the method as described.

However, Bruckman et al., as modified by Sandstrom, do not specifically disclose a gigabit Ethernet service.

In the same field of endeavor, Branstad et al. clearly show a Gigabit Ethernet communication adapter (fig. 4, column 3, lines 52-56).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a bandwidth managing method, as taught by Bruckman et al., and assign bandwidth according to usage capacity, as taught by Branstad et al., in order to guarantee that the SONET network is utilizing its bandwidth efficiently.

Consider **claim 4, and as applied to claim 1 above,** Bruckman et al., as modified by Sandstrom, clearly disclose and show the method as described.

However, Bruckman et al., as modified by Sandstrom, do not specifically disclose a rate setting mechanism.

In the same field of endeavor, Branstad et al. clearly show an adjustment limit parameter (fig. 4 (412), fig. 5;column 4, lines 46-57) with each service to control when to increase the bandwidth allocated to that service.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a bandwidth managing method, as taught by Bruckman et al., and assign bandwidth according to usage capacity, as taught by Branstad et al., in order to guarantee that the SONET network is utilizing its bandwidth efficiently.

Consider **claim 9,** and **as applied to claim 1 above,** Bruckman et al. as modified by Sandstrom, clearly disclose and show the method as described.

However, Bruckman et al., as modified by Sandstrom, do not specifically show the service-of-interest.

In the same field of endeavor, Branstad et al. clearly show for each service, a services-of-interest list (fig. 2, column 4, lines 25-39 (the link is shared by other services, e.g. 1M , 10M, 100M and 1G speed Ethernet)) for identifying one or more services with which that service contends for the bandwidth of the optical link.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a bandwidth managing method, as taught by Bruckman et al., and identify a list of services, as taught by Branstad et al., in order to guarantee that the SONET network is utilizing its bandwidth efficiently.

Consider **claim 15,** and **as applied to claim 10 above,** Bruckman et al., as modified by Sandstrom, clearly disclose and show the method as described.

However, Bruckman et al., as modified by Sandstrom, do not specifically show bandwidth assignment corresponding to usage capacity.

In the same field of endeavor, Sandstrom clearly shows a full utilization metric (column 11, lines 13-19 (cap (transmission capacity))) with each service to determine a maximum bandwidth allocation (column 8, lines 28-50 (target capacity)) for each service and a priority between the services to be used when balancing (column 9, lines 48-55).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a bandwidth managing method, as taught by Bruckman et al., and assign bandwidth according to usage capacity, as taught by Sandstrom, in order to guarantee that the SONET network is utilizing its bandwidth efficiently

Consider **claim 20,** and **as applied to claim 16 above,** Bruckman et al. as modified by Sandstrom, clearly disclose and show the method as described.

However, Bruckman et al., as modified by Sandstrom, do not specifically show the service-of-interest.

In the same field of endeavor, Branstad et al. clearly show first and second network elements each maintain a services-of-interest list (fig. 2, column 4, lines 25-39 (the link is shared by other services, e.g. 1M , 10M, 100M and 1G speed Ethernet)) for identifying one or more services with which that service contends for the bandwidth of the optical link.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a bandwidth managing method, as taught by Bruckman et al., and identify a list of services, as taught by Branstad et al., in order to guarantee that the SONET network is utilizing its bandwidth efficiently.

Claims 6 & 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bruckman et al. (U.S. Patent Publication # 20040179518),** in view of **Sandstrom (U.S. Patent # 6697373),** and further in view of **Aimoto et al. (U.S. Patent # 6144636).**

Consider **claim 6,** and **as applied to claim 1 above,** Bruckman et al., as

modified by Sandstrom, clearly disclose and show the method as described.

However, Bruckman et al., as modified by Sandstrom, do not specifically disclose

that a bandwidth allocated can be a granularity of the STS-1 plan.

In the same field of endeavor, Almoto et al. clearly show the additional bandwidth

allocated to one of the services is a granularity of an STS-1 path (fig. 4, column 3, lines

56-67, column 4, lines 1-3 (the gigabit Ethernet communication adapter can adapt to a

lower speed)).

Therefore it would have been obvious to a person of ordinary skill in the art at the

time the invention was made to incorporate a bandwidth managing method, as taught

by Bruckman et al., and assign bandwidth according to usage capacity, as taught by

Aimoto et al., in order to guarantee that the SONET network is utilizing its bandwidth

efficiently.

Consider **claim 8,** and **as applied to claim 1 above,** Bruckman et al., as

modified by Sandstrom, clearly disclose and show the method as described.

However, Bruckman et al., as modified by Sandstrom, do not specifically show

bandwidth assignment corresponding to usage capacity.

In addition, Sandstrom clearly shows a full utilization metric (column 11, lines 13-

19 (cap (transmission capacity)) with each service to determine a maximum bandwidth

allocation (column 8, lines 28-50 (target capacity)) for each service when balancing (column 9, lines 48-55).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a bandwidth managing method, as taught by Bruckman et al., and assign bandwidth according to usage capacity, as taught by Sandstrom, in order to balance the bandwidth usage.

However, Bruckman et al., as modified by Sandstrom, do not specifically show the priority associated with the service.

In the same field of endeavor, Aimoto et al., clearly show a priority (column 1, lines 19-35) between the services to be used when balancing.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a bandwidth managing method, as taught by Bruckman et al., and assign bandwidth according to usage capacity, as taught by Sandstrom, and assign priority for each service, as taught by Aimoto et al., in order to guarantee that the SONET network is utilizing its bandwidth efficiently.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bruckman et al. (U.S. Patent Publication # 20040179518)**, in view of **Sandstrom (U.S. Patent # 6697373)**, and further in view of **Montgomery, JR. (U.S. Patent**

Publication # 20040057453).

Consider **claim 19, and as applied to claim 16 above,** Bruckman et al., as modified by Sandstrom, clearly disclose and show the method as described.

However, Bruckman et al., as modified by Sandstrom, do not specifically disclose a linear network for the optical Sonet network.

In the same field of endeavor, Montgomery, JR. clearly show a network, wherein the network is a linear network (fig. 10, paragraph 57).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a bandwidth managing method, as taught by Bruckman et al., and demonstrate that the optical ring network can also be a linear network, as taught by Montgomery, JR., in order to guarantee that the SONET network is utilizing its bandwidth efficiently.

Claims 5 & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bruckman et al. (U.S. Patent Publication # 20040179518),** in view of **Sandstrom (U.S. Patent # 6697373),** and in view of **Branstad et al. (U.S. Patent # 6498782),** and further in view of **Aimoto et al. (U.S. Patent # 6144636).**

Consider **claim 5, and as applied to claim 4 above,** Bruckman et al., as modified by Sandstrom and Branstrad et al., clearly disclose and show the method as described.

However, Bruckman et al., as modified by Sandstrom and Branstrad et al., do not specifically disclose a threshold value for current utilization metric.

In the same field of endeavor, Aimoto et al. clearly show that additional bandwidth is allocated to one of the services if the current utilization metric exceeds a threshold (column 6, lines 41-45 & 52-65) based on the adjustment limit parameter for that service.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a bandwidth managing method, as taught by Bruckman et al., and adjust the bandwidth according to the threshold, as taught by Almoto et al., in order to guarantee that the SONET network is utilizing its bandwidth efficiently.

Consider **claim 14, and as applied to claim 10 above,** Bruckman et al., as modified by Sandstrom, clearly disclose and show the method as described.

⊃

However, Bruckman et al., as modified by Sandstrom, do not specifically disclose a rate setting mechanism.

In the same field of endeavor, Branstad et al. clearly show an adjustment limit parameter (fig. 4 (412), fig. 5;column 4, lines 46-57) with each service

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a bandwidth managing method, as taught by Bruckman et al., and assign bandwidth according to usage capacity, as taught by Branstad et al., in order to balance the bandwidth usage.

However, Bruckman et al., as modified by Sandstrom and Branstrad et al., do not specifically disclose a threshold value for current utilization metric.

In the same field of endeavor, Aimoto et al. clearly show that additional bandwidth is allocated to one of the services if the current utilization metric exceeds a threshold (column 6, lines 41-45 & 52-65) based on the adjustment limit parameter for that service and usage of the bandwidth of the optical link is currently less than full capacity.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a bandwidth managing method, as taught by Bruckman et al., and assign bandwidth according to usage capacity, as taught by Aimoto et al., in order to guarantee that the SONET network is utilizing its bandwidth efficiently.

Response to Amendment

Applicant's arguments filed on September 10, 2007, with respect to claims 1, 3,

7, 10-13, and 16-18 on page 7 and through page 11 of the remarks, have been fully

considered but they are moot in view of the new ground(s) of rejection necessitated by

the new limitations added to claims 1, 3, 7, 10-13, and 16-18. See the above rejections

of claims 1, 3, 7, 10-13, and 16-18 for the relevant interpretation and citations found in

Sandstrom et al., disclosing the newly added limitations.

Conclusion

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to:**

>Commissioner for Patents ·
>P.O. Box 1450
>Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

>Customer Service Window
>Randolph Building
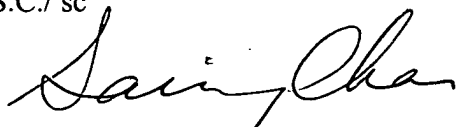>401 Dulany Street
>Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the

Examiner should be directed to Sai-Ming Chan whose telephone number is (571) 270-1769. The

Examiner can normally be reached on Monday-Thursday from 6:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's

supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the

organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 571-272-

4100.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist/customer service whose telephone number is (571) 272-

2600.

Sai-Ming Chan
S.C./ sc

December 18, 2007

SEEMA S. RAO 12/19/02
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600